The Green Economy

Okay. We're just going to give people a bit of time to be able to join these sessions and you can see that, you know, yeah. They're, they're actually getting in now from the waiting rooms. Um, give that a few seconds. This is normally around like 70 something at least, you know, for this window. Uh, so your athlete all in the round window of map, uh, and, and this session is about, uh, the green economy.

Um, and we're going to have three speakers. I think we should be okay. We can decide. So hi everyone. I'm Jen, Ashley. And again, you know, welcome to wrong window of math camp. Uh, you're in the green economy, uh, session and we have three great speakers today. Uh, the parents, um, under Sonya. And did I pronounce that correctly?

Andra? Sorry. Okay. So, um, we're going to get started with, um, Carla the first, um, and that's going to be followed by Andrew and then Adrian. Uh, we'll be mapping based on, uh, uh, earlier thoughts. So, um, get handed over to lot and now

do I just start? Yep. Okay. Well, thank you very much for this opportunity. Uh, I'm going to share. And, uh, my talk is going to go beyond just the green economy, because in fact, there is no possibility of having the green economy without actually turning the digital economy into a green economy and turning them both into a fair and global golden age, which I will argue.

And that is because in order to construct a future, it's very useful to have a good knowledge and understanding of the past. So what I will do today is to explain why we can be hopeful of a global golden age, but also why we should understand that it doesn't happen automatically. That it's a, it's a big task to bring it about, and it will be green and it will be fair.

And it will be smart in the sense of digital. But most likely it will have to be global in a special sense. And we hope it'll be a golden age. So with my studies of technological revolutions in the past, I can bring you an understanding and some hope for, for a better future. So the first thing is to understand that the future is not the continuation of the recent past, nor is it determined by technology.

There are lots of technology determined, neurological determinants around who think that because artificial intelligence can do this or that that's going to happen. No, we decide we shape it. We design the future. It is not an automatic thing that if the technology can do something it'll happen, we get direction to.

And in order to understand that history is probably the best source of criteria to guide us in the process. So I'll talk about the five technological revolutions and four golden ages that we have seen the social shaping of technologies. I'll ask. What is the nature of golden ages? And finally, why should we, would we have smart, fair and green together?

So there have been five technological revolutions in the past 240 years. The first one was the industrial revolution with machines, factories, and canals. Every revolution has a particular infrastructure. Canals was the infrastructure of the first revolution because, because the infrastructures are transport infrastructures mainly, and they widen the space, they widen the market.

So they allow for a big wave of. And wealth creation based on the new technologies. The next one was the age of steam, coal, iron, and railways railways being the internet of the time. Uh, then we have the age of steel and heavy engineering, electrical, chemical, civil Naval. At that time, we had three infrastructures, steam ships, uh, transoceanic Telegraph, and trans continental railways, then 1908, the age of the automobile oil plastics and mass production, where are the infrastructures that open the markets where, uh, roads, the road, network, highway, network, airports, et cetera.

And of course, radio and television and so on for communication and our own age of information, technology and telecommunications, where the internet is the infrastructure. And we have. Only halfway, even though it has been so many years since the microprocessor, I hold that we are only halfway along and that we still have the second half, which is going to be, hopefully it will the nature.

So each of these revolutions brings a techno economic and social institutional shift. So it's not just the technologies that change. It's the whole institutional structure. The state has to change the policies, the welfare state, the conditions for, um, for the taxes, the, you know, innovation and, and, uh, investment are led by this new, uh, framework that happens after I will explain in a minute.

So, but what happens is that the first half is one of growing inequality. Creative destruction as Schumpeter called it. And the second half is when we get the golden ages, the historical record reveals the sequence of bubbles and golden ages. So we have mobile prosperity with increasing inequality and a golden age prosperity with win-win game on the other side.

But in between there is a post bubble recession, political unrest, populism, the things that we are seeing now they are. And we are just sort of hopefully at the end of this middle period, and just before we can set up a golden age. So after the canal mania and the short recession, there was the great British leap.

Then the railway mania was followed by the Victorian boom, the many global booms in Australia, uh, Argentina, et cetera. Uh, the gilded age were followed by the book and the progressive era, the roaring twenties were followed 40 years later by the post-war golden age, the.com boom and global casino that we have just had could lead to a sustainable global ICT golden age.

That's the question. The golden age is depend on government policy, providing direction, and the post pandemic reconstruction opens an opportunity similar to that after world war two. That's why I think we might just be here. So how about the social shaping of technologies? Well, as I said before, technology does not determine the future.

All it does is to set the stage and provide the tools. So the shaping to bring about the golden age is social political. It is not just about the economy. It's about the institutional framework. So the outcome depends on social pressure, obviously. So civil society, political movements, business, and thought leaders play a defining role in the outcome.

What did we get with the mass production, golden age employment, education, health, and security based on home ownership and mass consumption, but we destroyed the environment and excluded the developing world. What could we get with a digital, digital and green golden age, all of that, but smart and green plus meaning creativity, social networks, lifelong learning based on collaboration, access rental maintenance, recycling, and reuse a more ethical capitalist.

With an improving global society flourishing on a healthy planet, lovely dreams, perfectly viable. Will they happen this time? The transition is very deep from energy intensity to information in Pennsylvania, in production and consumption from consumerism and waste to conservation reuse and recycle from resource intensive products to knowledge intensive services from possession to access from maximum to optimum mobility from mostly national to increasingly local sub international and global governance from home home centered to network centered from aiming at passive comfort to aiming at active satisfaction, et cetera, et cetera, et cetera, you can continue that.

Many institutional innovations will be required to facilitate that transition. Now, what is the nature of golden ages? Well, the three periods are distinctly different. The installation is a gilded age. You know, that Gilder is just any base metal, but it has a nice thin cover of gold. So it shines well, the installation was all about financial capital and control deregulation, unfettered markets, creative destruction, new technologies, industries, and products versus obsolete technologies, industries, and products, easily millionaires, which ended up in job losses, skills, destruction, widening inequality, regional disparities, and so on.

So it is a very turbulent time. How about the turning, which is where we are now. I have called it the turning point, but sometimes it lasts much longer than a point. So. Uh, the post bubble recessions risk averse finance, precisely because of the hits they get with, with, uh, with the bubble collapses. But of course, if you do quantitative easing, they start trusting that the law is be safe and therefore they're okay.

Low investment. Nevertheless, it's basically the techies that use their money, which they don't pay in taxes. They use it for investment. Uh, we therefore have relatively feeble growth, lots of money being burned in the financial sector, but not so much, uh, not so obvious that we. Proper growth across countries on the world, social unrest, inequality, hopelessness, and therefore, instead of phobia, you hate the migrants.

You hate the Mexicans or the Jews or the Muslims or whoever, whoever is around that. Wasn't there before. One of not us populism, of course, the PO the messianic leader spot for heaven. And because people are angry rightfully because they have lost their future, they have lost their hope. And then you get these people giving the idea that they can solve the problems, which they can't structural unemployment, economic migrations, talk of secular stagnation and so on.

So what about the golden ages? The deployment of the whole potential. Well, it's a time for a proactive state with social consensus production, capital control, rather than finance and finance has to innovate a lot in order to, it has to be a real service in order to make money, creative construction, clear policy direction, dynamic markets, stable regulation, productivity increases across the board from the spread of new technology across all industries, social security measures, reduction of inequality, social stability, progressive taxation, and so on.

They are very different and golden ages. Other times when capitalism regains legitimacy by sharing the fruits of wealth creation, that is precisely what has made capitalism, uh, legitimate and the nature of the turning point serves as the alarm bell for government. So that's where we are. The defining feature of golden age is the shift from high inequality to a fairer society.

If we look at the USA from 1913, which means the beginning of the mass production revolution to 1918, which is midway along the information revolution, we find that the percent of declared income earned by the top 1% of taxpayers, including capital gains. This is the data from because the size of course, uh, went as far as 25% as high as 25% of incomes, uh, in the roaring twenties and now in, from the nineties and the two thousands and so on.

But then in the post-war boom and the golden age of mass production, it goes down to. And that is exactly the phenomenon of going from installation to, uh, to go then ages to deployment. So will we stay up there because that's what we did after 2008, quantitative easing save finance, don't save the people.

So maybe we can, we can do this. It is perfectly viable. It's needs to be socially and politically, uh, decided. So would the post COVID boom lead to a green golden age of information? It could. It should. And business counts on dynamic demand from prosperous consumers when we have golden ages. So it's good for business too.

It's a positive sum game, actually, when we do it again. It is precisely from revolution to revolution. I'm from golden age, the golden age, that social progress, of course, in capitalism, it's like a ratchet. It goes back and destroys jobs and things, creative destruction in the installation period. Then you come to the, to the reckoning when you have the recession and you realize all the harm, you know, that's what COVID allowed us to see all the zero hours contracts on the gig economy and all these things that make insecurity for people.

And, and of course that's when we get the populists, we get the trumps and the, and the Brexits and all of these things that actually make, uh, uh, make people. You know, it, it proves that people are angry and they are right to be angry. So, but then we get the leap, we get the progress. So golden ages are essentially a positive sum game between business and society orchestrated by government.

And that each productivity leap, a new layer of society is brought to the good life while some are left behind. That's how we came from the satanic mills, all the way to workers, owning a house on a car, the door on electrical plants of the children going to university. So, but the distinctive feature of golden age is its directionality.

It's precisely that the economy goes in. Clear directions. It is tilting of the playing field, so that all policies, taxes, subsidies, regulation, et cetera, point in the same directions and create dynamic demand. And that's why institutions have to change because the direction has to be different in all directions.

The old technologies, the old ways of being the old good life is gone. We need a new, good life, a new direction for businesses, new innovation, and we have the technologies with which to do it. So, um, sorry. Oh,

and that each productivity leap, I said.

So it is a tilting of the playing field. So that all policies I said that already, I'm sorry, I got confused. This induces innovation and investment towards increasing synergy with increasing productivity and stable profitability. Now why smart, fair and green together? What is it that makes us think that it should be that?

Well, the first thing is that direction never comes out of a hat like a rabbit. It's about intensifying existing trends, solving major existing problems and taking best advantage of the installed technologies. All this simultaneously after the second world war reconstruction, unemployment, the end of military demand and the Soviet.

Led to social democratic policies to guide the existing mass production potential towards suburbanization, which meant mass consumption and cold war production, which meant high tech really high-tech development among them, of course, uh, internet computers and, uh, microprocessors and all those things and, and traveled to space today.

The conditions for a strong directionality are clear. We are at the confluence of three critical moments, the turning point of the ICT revolution, which I just explained, which is a time for social sustainability, the climate threat with the urgency of environmental sustainability and the post pandemic reconstruction, which provided, or which created consensus on public action.

It was so cool. That the government had to do something. It was so clear that we were all in this together. And if the climate work to bring anything similar, even mildly similar to the pandemic, but permanent we'd be in real trouble. So we have understood that the state has to come back, forget about all this austerity, all this worrying mainly about the better, not mainly about investment and wealth creation.

So that's where we are. And the stages then set for synergistic smart, green fair, and global growth. It is up to governments to proactively establish the conditions, but it's up to us to pressure governments into that. If business understands the critical moment without myopic short-term interest. We can set up a positive sum game between business and society between advanced, emerging and developing countries and between humanity and the planet.

And guess what? That would be the golden age of the global knowledge society. Thank you.

I can not hear is somebody talking?

Sorry. I used to be speaking in. I thought I didn't realize. So thanks for this conquer a lot. Um, that's what I was saying. I was on mute and, uh, there are ask the questions now, uh, but we'll reserve that for later, once we are done with all the presentations. So I'm gonna, uh, give the floor to Andrea for her doll.

Okay,

great honor. To be part of the session and, um, um, I, most of the loss of what I can tell you, uh, after, after, uh, very inspiring. And full of hope, um, presentation. Um, so I will, um, I will try to give you a view of, um, what I think happens in, in the finance world, in the context of the green economy and how to make sense for yourself of, from the huge amount of information, which floats, uh, around us on this topic.

Um, so my perspective comes from the fact that I'm a service tech. So I usually look how things work, um, in banking, how banks are put together, but I'm also a researcher. And, um, I, um, as a researcher, I think differently about this, um, these topics, uh, and I. Go a lot into modeling what I, what I see in the world, including banking, including finance.

So that's my perspective. If you, if you, if you want to understand what angle I'm coming from, just a second, I think this covers.

Okay. Um, so w what is very important to have in mind at the moment is that the Paris agreement, which is, which is now in place, it's a sort of choose your own adventure type of approach. And dealing with climate. So is it different from the Kyoto protocol, uh, which established, um, targets, um, for countries, uh, and more specifically for developed developed countries only for developed countries, not for, uh, not for others.

For example, China was not included in the basic agreement. Um, it, each country and each entity could choose what it wants to do and when they are not targets and they are not timetables, hence very often the confusion of what, what is going on. So you will see, um, uh, projects and proposals from made by cities like Toronto and Paris by corporation banks.

And so on.

Um, when I think about, um, when I think about, uh, finance or financial work, I do think about it as a, as a complex system. And many people will say, no, no, it's not con it's not complex, it's complicated, but it is actually complex. And the fact that got a Nobel prize, uh, this past month, um, it it's just a recognition of the methods, uh, which he developed and which at the moment are applied by, uh, researchers, um, in, on the financial services system.

It's difficult. When you look at something like that, it's actually much more complicated than that. This is just an artistic, uh, artifacts. Um, when, when you look at that, um, how, how do you, how, where do you start if you don't understand what's going on? Um, And I would propose at least three layers for it, for simplicity, but it usually is enough.

So the blue layer, which is where the banking and the individual and commercial banking happens and where most of the FinTech world stays. It's the visible level of banking. It's how people interact with, with banking. And there is a multitude of, um, um, applications, approaches, startups, and so on. The second layer is how the banks are put together and how they interact with each other.

And the third layer, the red one is a financial market infrastructure. The grade correspondence of each layer are actually the parts which are not incorporated in the regulated industry. And sometimes they are legal. Sometimes they are illegal as we will see. So if I look at all this, all these layers and all these systems at the moment, what we have, um, uh, it's a multitude of frameworks around banking only, which are all about net zero and, uh, climate change and responsible banking.

So we have, uh, six principles of responsible banking. We have the cloud, uh, Glasgow financial Alliance for net zero net, zero banking Alliance. All these are different frameworks to which bank sign, uh, sign up and then they commit to various objectives. Uh, we have the year Greendale. We have the sustainable development goals, which are an overarching framework for, for all this.

So it seems that a lot of what is going on, it's around, uh, frameworks for analyzing and reporting what banks. And what, um, and from this point of view, we look at least from this from two point of view. So all these frameworks fit in one or the other either they look, um, but the banks own footprint and you have not the frame of their, um, banking as such is not an industry with a big emissions, um, footprint.

It's not manufacturing anything by comparing comparison with others. They are okay. And most of these frameworks are around the client exposure. Um, I invite you to. Um, look at each of these frameworks. Um, I didn't want to spend the few minutes that we have together, uh, detailing this framework, but I can tell you that what you will find behind probably you will not be surprised.

Um, very often is a large Excel file, which you can download and play around with. And, um, that is best. Uh, the banking industry would come when, um, in order to analyze the plant exposure and the portfolios. And there are a lot of problems with that. And we, we could, we could just think of, you know, classifying, um, industries as wood beds, not so good, not so not so bad.

And then, um, uh, having, uh, uh, um, kind of, um, summarized information about, about your exposure. It's not enough what is going on. So I do know that most banks now do their own exercise is trying to, to clarify really what exposures they have and their, their reasons for being that, um, another layer from the ones that I introduced them.

It's a form in, in terms of, uh, approaches to dealing with climate change is, is formed from all sorts of partnerships between startup or small technology companies and, uh, financial institutions. And if I were to group them in categories, what are we looking at? Because really there is a jungle out there.

I would say that you have a big category around risk analysis and, um, you, you, you have at least, uh, um, Uh, let's say two types of risks. You look at the transition risk and the physical risk. Um, and in each of these categories, you have, uh, taxonomies which banks need to report on. So they are multi-colored of companies in helping banks being that, um, if you're technical issue tech, uh, evaluating, um, new types of new types of risks and calculating insurance for, uh, events, which before was entirely uncommon or not insurable, but now they are quite common.

So something needs to be. Uh, regulatory technology. So again, reporting around those frameworks and, and investing. So in investing, you would say, this is an actionable thing because it's one part to figure out, okay, what, um, what do you have? What your client exposure, but then you need to start acting, do I invest in this, in the street?

Or should I stop now? If I stop now, what happens with that industry? Do we have a transition plan, but we have something to put in place, or if I invest now, and I know that this is something which will be dying, um, the chances are that you remain with us with, with stranded assets. So even if it seems like a simple game, oh, don't invest in this investment, don't invest in this anymore.

If there's nothing in place for that particular need niche. Uh, it, it, uh, it, the transition it's, uh, it's quite difficult. Um, another, um, let's say level the lower one, the one which I told you about earlier, uh, the, the FinTech you one or the visible one, the one where we can engage with, uh, as, as individual aim on influencing people, um, how they decide to spend and invest.

And they are, um, a number of, um, indexes, which are calculating or are suggesting, um, uh, the equivalent, um, emissions for, let's say a pair of shoes made of leather or a cup of coffee, or, um, and based on these indexes, like the index or the. Um, there are companies which, um, uh, some sometimes embedded in your banking applications sometimes not, uh, which calculate your carbon emissions.

If, if you are interested to do that. So Cabo here, or many guys here or countable, and so, or they calculate the footprint of the, um, uh, brands that you're consuming. So really, um, when you look at so many frameworks, then probably frameworks around banking for figuring out what is happening in, in finance, you would think that we sorted out the situation and actually we didn't.

Um, so I will give you a brief example, uh, that, uh, we will be using also in the mapping, in the mapping exercise with Adrienne and, uh, catalog. And the example is, um, um, very much documented and researched the, you have the link to the, the, the paper they're bringing the road system collateral framework. So briefly it's the following situation.

So we are saying that we are classifying in the banking world there, um, financial instruments and all the, um, investments that we have. And we know where we are. Um, when we do this, uh, what the most critical information or the most critical step is who decide what is green and what is not. And what degree of green is that from this point of view, You know, but they appointment of UK representative for climate change and financial innovation is worrying, um, as an aside.

But, um, in this, in this case, uh, the example is about the Euro system, which is set of central banks, which use your role. Plus the European central bank. Uh, the Euro system creates money for commercial banks and, um, it, it lends money to the central, uh, to, uh, to commercial banks. It lends money to commercial banks in exchange for a guarantee for a collateral.

So we have a collateral framework in the Euro system, which establishes what type of collateral you can accept from, from the banks in exchange for central bank. And what do you include as a collateral? What is considered acceptable and the terms, um, uh, paid for different types of collateral really influence what happens in the wider economy, because it signals to the market view, uh, the view of the Euro system, about industry and their riskiness.

So you would say that after we discuss, I don't know, in 10 possible frameworks, principles of responsible banking banking for net zero and so on about what is good, what is bad? We started out this problem. There've been reality. Now we didn't. So this is very recent. So we have on the left of a commercial bank and here a central bank, but it could be any central bank.

And, um, this commercial bank needs some central bank money and it gives us a collateral. Some bonds doesn't matter what bond well at the moment, and the bonds are value, let's say 100 million euros. And in exchange, the bank receives those funny minors that have got a percentage that the bank, uh,

considers that it's a degree of operate for that situation. So how green is that collateral? You would think that the central banks also implemented those policies and they, uh, they, they influenced such choices. And in reality, 59% of the corporate bonds that ECB accept as collateral, they are carbon intensive companies.

Then what else can we think about how big is the average haircut? So how much they receive the banks receive in exchange for those collaterals and, um, um, And you will see that actually the bank penalizes non-carbon intensive sectors because the haircut is almost 14% when for the ten first 10, because fossil fuel companies, just 1% of 4%.

So it means that if you, if you put a first fuel, uh, bond, uh, you will get 99 for the value of 100 for that bond. While if you put the non-carbon intensive one, you will get 100 minus 14. So this is a mechanism. So when we design the system and the technology, isn't, it just doesn't happen. We designed the systems to behave in a certain way.

This is a typical behavior, which is not modified for what we are saying. Um,

So what would happen? What, the way, what, the way out of this situation. So it's very simple. Uh, I would say, um, so you could, once you change, uh, the, the list of collateral, um, accepted what you can exclude to a certain degree, um, uh, fossil fuel companies or other carbon intensive companies, or change or align the haircuts, uh, with, uh, with, uh, climate change, uh, policies, which is not the case at the moment.

While all this happens, all those frameworks happens and all these discussions happen. And for some areas we know the mechanisms that we need to change and probably they will change. The problem is that largest part of the finance world is really well hidden. And here I refer not only to Panama, Dora, but many other things that we, we have no idea about.

And it's actually impossible if you control how those are truly invested. So they stole it from me.

Okay. Thank you very much. Aandra um, and I believe at this point it will be, uh, Adrian's, uh, turn in the plan is for you to do some mapping, right? Based on the first. Yeah. Okay. You can hear me. All right. Um, yeah. So last, last year at map camp, I built a map in sort of real-time I prebuilt it and I kind of extended it and revealed it as I was going.

And, uh, it sort of worked out even though I created it the night before and it was a bit stressful. So, um, we're kind of in a similar situation here, except that, um, I've been studying what Carlotta has been saying. I have a book, everyone should read the book principles for the Technicolor, the revolutions and financial capital, and trying to understand all the ideas in it.

And then, um, looking at her presentations recently and trying to extract how, how can we map that? And I think the. There's three different flavors of maps. Uh, one of them is more of the technologies that just talking about, and they're relatively simplistic, kind of the typical kind of maps that we see where we're looking at technology evolution from Genesis through to commodity.

The second type of map is more about social mapping and the access is different. It's more, more the I'm using. I'm going to use the access that Simon was using when he was talking about culture, um, to, to try and capture that. So we'll talk about the social change as a separate thing. Um, and then I tried to, as we, as I was listening to Caloundra, I was trying to capture the things that I hadn't talked about.

And if you look at the vertical axis on a map, the value chain, the question is what is on that value. And at the top of some of the value chains, you have consumers, um, at the top of it, you know, you're basically looking at, um, the consumer value chain, then there's another one. When you're looking at more social things, I've got effectively got, um, corporate interests at the top, what a corporation's doing.

And then the final one that I created, because I realized it was sort of missing as I was listening to Carlotta was more about the, sort of what a government is, what the public policy things in that space. So I'm going to share my screen and hopefully you can, you'll be able to see what I'm doing here.

All right.

Okay.

You can see my browser here. Um, So, what I decided to do was try to map the start of the age of automobiles or plastics and mass production. Okay. So what we've got here is the previous age has gone all the way through and completed. So what I figured we'd do was start, what is, what does a ma can we try and map the beginning of that age?

And then I'll look at what it looks like at the end of that age and use that as the beginning of the age, we're currently in the technology age, and then look at where we are now in that age, and then try to look at where we might be in that age. So that's an, I've sort of, pre-prepared some maps. So I'm looking for input from, uh, Colorado and Andrew in particular to see if this makes sense.

So the first thing I did was. Automobiles plastics, mass production and oil on a map. And at the start of the age, um, oil, I think is a product at this point. Um, but we need an anchor. So, so the way, the way I decided this maybe automobiles at the beginning of the age were largely custom built. They were coach builders, right at the beginning of the age of, of, of, uh, mass production.

It was the transition was becoming to the Ford model T. So we were transitioning into, from custom built to product plastics. We had Bakelite and we had didn't have all of the Bryant plastics we had today. Mass production was something that was developed in the previous. Um, but the idea of factories came from the previous industrial revolutions.

So we knew how to build factories, but we're now building mass production and oil was mostly extracted and used locally. At the beginning of this. So, but what we need is a consumer and I decided to add a couple of things on there. So we need a consumer that is consuming all of these things, and they're basically consuming products.

And I wanted to be a little bit more general than just automobiles. I've got consumer packaged goods, all of the things of the consumer age that came along and I connected them up like this. So oil is needed to make plastics to run automobiles. If it powers mass production and consumer packaged goods, there's a lot of plastics in there and then packaging them.

And those are the products that consumer has. So does, does that make some kind of sense as a starting point? Yeah. I'm getting, I'm watching. I can see a lot of nodding or shaking heads, so we'll go, we'll go on that this point. So the other thing that happened now, consumers need to know about these products.

And they need to figure out how to pay for them. So what we had was the beginning that this is again, at the start of the age, we had the start of marketing as a thing, and the channels that, that it would use and you have newspapers and then that kind of marketing billboards. And we had consumer finance starting up as, as, as a new new area.

Um, and I think for oil production was local and major countries had local corporations. So think British petroleum, right. That was just doing gasoline. And that was the old company for England, right. There was all of the oil companies that you see have a country name in the title because they started locally in those countries.

Um, so then what we had was, um, a little bit of maturation of the market. And so I've got some evolution here. Let's do these one by one. So consumer finance, I think, um, we eventually ended up with credit cards. We had all kinds of, you know, high purchase and things in between, but it's really become a commodity today.

You can get a credit card from anyone. There's lots of ways of doing consumer finance. So it went from a conceptual idea to something that matured so that you can finance whatever you want to buy. Um, and then automobiles evolved to be products. Um, oil, um, became global. A lot of the companies bought each other.

There was a lot of consolidation. We ended up with OPEC of the global oil companies. So BP doesn't just operate, um, in, in the UK, it has operations globally. Right. That kind of thing. So. No, what we've got is a fairly messy looking now because of all of the evolution and all the way, the lines, the lines flow on it.

Um, but I'm also gonna evolve, uh, marketing, which started to become product taste. Um, as we went through this, um, this process that instead of it very exploratory market, it becomes more productized and consumer packaged goods become very much commodities. So that's, that's the idea here. Um, does that, does that make sense of things in the right kinds of places?

Should I move things around? Does, does that make some kind of sense, getting some kind of nodding from colada? I've obviously missed a whole lot of things out, but the point of a map is you, you concentrate on the way to build, think about building a map is, think about the things that are going to move or that you want to make strategic decisions about, and then leave them on the map.

And then you have just enough supporting things to actually connect them together. Right? If you think about, you know, the typical map you have on your phone, you can have the satellite map, which tells you whether there's, you know, is it green or brown in the ground, right. And what the color the buildings are.

Or you can just say, I don't want to know that detail. I just wanna know where the roads are. And then it's easier to see the locations of the things you're trying to find. Right? So there's these different levels of detail. Do you want to extract the detail, remove the detail to make it easier to manage.

Okay. So that was one map. And then I've actually figured out, by the way, this took me forever to figure out what the online Wardley maps. But if you I'm on a Mac and if I scroll upwards, the whole thing, the usage and the instructions and the guides and the help stuff is hiding down here. And it took me forever to figure, I accidentally did this one time and suddenly realized that's where all the help stuff was.

So drove me crazy that I couldn't figure out how to help. So, so then just doing that sort of two finger swipe up on my mouse pad here. And then the other thing you can do with maps, which is quite clever, is you can have links that take you to the next map. So I can click on here and get me to the next map, but I will actually, um, go directly to that map.

So this is, this is the previous map. Except I took, instead of having all the red stuff, it's basically just going to the end point. So what I did was I took all the evolution and I just left myself with the places I had evolved to. So now I'm looking at, towards the end of that evolution or phase. Um, and then I realized that I forgotten to evolve plastics.

So I'm going to do that. So, uh, you don't need to adopt because there we go. Right. So plastics over there. So this is sort of the, if this is the 1960s, for example, all right. So it's the end of that industrial thing just before the technology revolution started, this is what we had as a baseline to build on top of, and the way that you think about the, this in Wardley mapping is that you want something has evolved.

You build a new thing on top of it. So this very much ties into. Hello to describes these revolutions. So it's basically just that the previous map moved over. So then if we look at the age of information, um, what I've done is sort of pushed some of the other things down lower and remove the ones that didn't seem particularly interesting.

So I've got a consumer marketing product. I pushed automobiles and oil down a little bit, and now we need to add information technology and communications to this map. Um, so here we've got, these are the things I thought were entering. So this is thinking of 1971. Okay. What did we have in the 1970s? Right.

We had telephones, which were pretty much a commodity at that point. The telecommunication industry you've just got a phone. You could, you know, phones were fairly simplistic. Um, we had business computing. And the microprocessor enabled the home computer of the 1970s, 1980s. This is the pre-internet phase.

Um, and automobiles didn't have computers in them. They were just sitting there as a product that was oil driven. Right. So trying to sort of introduce these things here and then some other things I think I needed to introduce where, you know, meet the electricity to run that, and it's largely running off fossil generation.

So the system is sort of the 1980s kind of view of the world that make some kind of sense, sort of see where I'm going here. I'm trying to figure out, okay, what was left over from the previous revolution? How does that tie into the new one? Um, now, if we look at, um, where we are today in the, in this age of information technology, um, Just really revealed.

The whole thing is, so what we've got is the consumer, um, has social applications and they have, they're using the, they have a smartphone. I sort of ignored the home computer. Like most of our lines today are on smartphones, so I'm simplifying it. So the smartphone is a thing that you use for social applications, for communication.

If you think about what you do, mostly on it, it's a video phone, meaning you can watch things on Netflix or YouTube, but also it's a zoom and the things we use to communicate, and we use it for getting Uber and Lyft and whatever we use it for variety chat. So there's a few kinds of things where we're either interacting with services, we're consuming content.

What we're communicating and rideshare is becoming a little more of a commodity over here. It's a utility. Um, it's the utility replacement for the ultimate. So we still have cars, but ultimately this is where we're going. So the smartphone ends up as sort of this key thing. And the microprocessor in the smartphone is interesting because it's not a product it's not like the off the shelf Intel chip that we see in other markets.

What we're seeing is fully custom processes like apple designs, its own processes from scratch. And we're seeing for cloud computing, AWS designing its own processes, which are differentiated. So we're seeing some product differentiation at the microprocessor design level. So that's sort of just an interesting thing.

I'm not sure how relevant it is to the whole, the overall thesis, but we went through a phase where everyone was designing their own computers. And then we went through a phase where everyone pretty much ended up using the Intel processes. And now we're going back to a phase where people will have the, the ability to design it themselves, um, is coming back in, um, And then there's this idea that marketing is actually the product of Facebook is a free service, even though it's very expensive to run because they are marketing you like new other products.

And this is also how, you know, Google and other companies and advertising work. So they're using the, the smartphone and the social applications and the video phone. That is the product that they are monetizing. It's the people. And then down here, I've got fossil fuel, but I've also got renewable energy and I've got renewable energy as a product because to really get lots of renewable energy to control the percentage you have, you have to do power purchase agreements.

We're seeing this across many large industrial companies like Amazon we're buying. We have 10 gigawatts of renewable energy under contract, right? We can't just assume that the local energy providers will give us green energy. We can't just say, please give us the green energy. Um, we have to go and fund wind farms and solar farms and do specific agreements to do it.

It hasn't commoditized. And finally the community telecommunications world, um, telecommunications with the internet has really become dumb pipes. Um, the telcos really hate becoming dumb pipes, but fundamentally, as long as my phone can connect to my social app, I don't care how it got there. There's the only added value you can have as it got there quicker.

And maybe I paid less, but it's extremely commoditized and it's not. The telecommunications industry is becoming less interesting because of that is not adding value. They keep trying to find ways to add value. So that's kind of where I think we are today. Any comments? Do you want to talk a bit about this or does that sort of make sense, but I want to, I've got quite a few things to get through here.

Okay. I think I'll just move on. And if somebody has either Andrew or carload, I think I see something they don't understand, or they want to push back on and jump in. So where are we going in the future? So I think if we evolve the video phone, Um, I think the thing, the reason that video video applications aren't completely universal right now is just bandwidth.

I think what we'll find with as 5g rolls out globally, instead of just video being a core feature in the developed markets, the developing world is going to get more and more bandwidth is going to become more universal, like trying to have a, a FaceTime call with somebody in Africa is, you know, in a, in a remote area, it's not likely to work.

They're not going to have enough bandwidth to do video. That kind of thing is going to become more ubiquitous and we have more and more video based applications, which expect bi-directional video bandwidth to be the key feature. Zoom is kind of the killer app here in some respect, but sort of showing what can be done.

Um, and social apps. One of the interesting things with social apps is we seem to get new ones all the time. Like Tik TOK came along a few years ago. Now has 3 billion. So, what we have actually have is a pipeline of new social apps. Cause the new kids don't want to be on the same social app as their parents.

I think there's one of the features here, right? So they always go to find a new one. You know, Facebook used to be for college students when it came out. Now it's for the old people, right? And then the young people are on Snapchat or they're on, um, Tik TOK or whatever, or some new thing that just came out that we haven't heard of yet.

So what we have is social apps as a pipeline, which is delivering new users to a marketing experience, you start off with this already unmonetized application, and then you figure out how to monetize those users. So it's sort of the, and if you want to be marketing to the new consumers, you have to jump on the new social app.

So I treated this sort of as a pipeline, there's always going to be new social apps coming along, which we'll get to very high user counts. And this is kind of the scary part for Facebook, why they keep trying to acquire them like WhatsApp and Instagram. Um, and they would like to have acquired snap and, um, probably tech talk and whatever.

So this you'll see, I think over and over again, you'll see new emerging things here. Um, and then we're involving, um, maneuverable energy, um, with a lot of resistance, uh, as Andrew was talking about, uh, fight institutional resistance to get the electricity to be renewable. Okay. And I've got some annotations here.

So Tik TOK, it's social apps pipeline from novelty market and commodity Zune video because it, oh, the other thing is autonomous rideshare. So it that we aren't just talking about using Uber to call up a car, we'll get with the future we're heading towards is, is that. Has this extra low cost option where there isn't a driver in the car, they didn't have to pay the driver.

And if the route you're going on, um, is one that the self-driving cars can manage. Then there's the option will appear to take us a driverless car from a to B, right? So you can see how, although driverless autonomous vehicles can't do everything. They will start to be able to do a few routes reliably.

And you can, you'll start seeing the ride sharing companies, starting to head in this direction. This is just the obvious direction we're going in. And the sort of Tesla are talking about doing it. Uber, you know, are the incumbent. And some combination of the two will turn into something interesting here.

So we've now got mobility as a service using the technology to deliver it and potentially a much lower cost because you're not just paying for the car. You don't have, you're only paying for the car. You don't have to pay for the person sitting in the car as well. So that's, uh, an interesting sort of concept.

Um, this is pretty speculative. Any, any other thoughts, thoughts on this? Does this make some sense?

Maybe. Okay. So the next thing I wanted to talk about was more about society rather than the products and the technologies. And I'm going to go back to the, a modified version of the, the map I drew last year is to try and come up with some basis for this. So last year I had this idea that I wanted to talk about, um, ideas versus this morality chain from societal to corporate morality.

What do corporations think? What does society think? And I had this, I changed the access along the bottom. I wanted to talk about ideas, building consensus, and there's a way of doing this with worldly, man. So, if we look at Wardley mapping his, his, like the cheat sheet for Wardley mapping, the excess labels that we normally use a Genesis custom product and commodity.

And what I was kind of wanting to use was concept hypothesis theory, universally accepted, but it wasn't exactly right. And then Simon pointed out, you can just need to pick one of these, one of these and one of these, and one of these, you don't have to use the same, bro. So, um, what I came up with here, which is, um, comment, this one is what I'm actually talking about is concepts, new, crazy ideas.

They emerge and build consensus. Then they start to converge, meaning there are competing options to buy into, and then they become broadly accepted. Um,

so. Try not to mess this up, but some comment, a whole bunch more stuff. So if you think about a corporation, it, it is messaging it's it's morals. What are the morals of a corporation? What does it stand for? What's the purpose, right? And if you think about that, it's, it's, it's talking to its customers, its shareholders, and its employees about what it stands for.

And what you have is the executive statement. What does Jeff Bezos comes out and says something about the climate pledge or whatever? Um, there's marketing content, which is all the PR marketing, what the company puts out on its websites, as this is all the stuff you're doing. Then there's the private position internally, which may be things that are being developed that aren't being talked about yet.

You know, we're going to make the announcement about a, uh, climate pledge kind of thing, but it's a private position for. And it will eventually the executive will announce it and then the marketing content will come out to support it. Those kinds of things you see happening. Um, and then you have all this internal content that supports it.

And some of the issues happen when employees see that the private position doesn't line up with the public position and things like that. So there's, this is kind of the, the difficult thing. How do you get the organization to change its internal positioning to line up with what it wants its public position to be?

So if you look at this internal content, the things that are driving it, our product differentiation, I want to green product, um, rehabilitation for, we did something bad and we want to attend. Uh, direct losses where, um, people are refusing to buy your product because if something, um, and then supply chain mandates the people that buy our product, the we, our company is in a chain of suppliers and consumers, somewhere up the supply chain.

Somebody is mandating that we, uh, we are, we have a certain moral position on child labor or green or supply chains or something. And finally you get the board level mandate where the board says, you know, in order to constrain the risk, we need to have these different, these different things being met dated.

And then if you look, um, along sort of the bottom, there are the societal things. There were fringe idea. There are movements. This is where you're building consent as a fringe is a very sort of, yeah, it's very much emerging. A movement is where there's consensus and there's an identifiable movement around something.

And then you get these convergent things like unions and societal norms. There are multiple unions. Some people like union, some people done there were different societal norms you can subscribe to, but it's a pluralistic view. There are lots of different ways that they're all converging, but there are, they haven't fully converged.

And finally you get to broadly accepted things which are, there are regulations and biases. And yet there's one way of doing this and we're going to enforce that one way. So I have a few things that I kind of did went through last time. One of these is the idea of the minimum wage, right? It's obviously something employees care about.

The been executive statements about it. The supply chain may say, we're not going to buy from companies that don't pay minimum wage. Um, we've seen, I think from the, we think about from the age of oil to the age of it, how has the idea of a minimum wage changed? So I'm not sure if this is exactly I'm trying to capture some of what Colorado was talking about here.

Right? So from the age of oil, minimum wage with something that was very much a, sort of a, an idea that we hadn't really formed much in the 1970s, late 1960s, seventies, but now it's something that's regulations, there's laws about it, but it's still, you know, it's a lot of pushback on it, but there are laws that there is an existing minimum wage in many countries.

And then there's just arguments about how and what it should be set at. Right. Um, a bit more in a similar thing as universal basic income. This is sort of somewhere between being a fringe and a movement. The idea of universal basic income probably didn't really exist. And the previous industrial age, maybe it was very much a fringe idea.

Um, but I think that what happens is it starts to become a little bit more of a societal norm. There were some countries in the world where this is happening. I think Norway kind of has it as a societal norm. Um, there's other countries and other parts of the world experimenting with it. So I think what we'll see is is this starting to evolve and I'm going to get rid of the minimum wage one cause it's, um, getting in the way.

Yeah.

So maybe universal, basic income. And there's this inertia thing here. There's a big barrier. You've got to build a lot of consensus. The societal norms have to start pulling it into being a convergent option and eventually there'll be regulations around it. And maybe, maybe it's going to take laws for it to really happen, right.

To be, to be a real thing. So it's one of these things that's being pulled forward by as by the societal trends. Make some kind of sense. Alright. Um, so let's see if I get rid of that disappears. So the next one and I talk about really quickly is racial equality, which is something that, you know, in the 1960s, we started to get laws about racial equality in the us and around the world.

So it was, it was, but it wasn't universally there. And I think what we've seen right now, racial equality is, is a pretty strong topic. It's got, there's a lot of laws. There's still people that don't, you know, pushing back on it, but it's pretty much regulated and it's the law of the land in most parts of the world.

Um, but if we look at it, Black lives matter as a, as something that was a big topic, um, like a year ago, certainly it started out basically as a, as a sort of a fringe movement. And it was amazing. All the statements we got from executives on black lives matter, right? If you go to these emails last year from saying, we care about the pandemic and we care about black lives matter from all these companies that you vape had some vague relationship with, you got an email from the executive saying we care about these things.

And I think what that did was it pushed black lives matter from being a fringe idea to being, um, a fairly strong program. And, and really the societal norms are starting to pull it that we need to reform the police force. We need to reform the way that some of the more ingrained institutional things, which I would like to be able to have laws saying it should be equal, but the institutional systems are not set up to support.

So that's kind of, what's what I think is happening there. Um, and then finally going to talk about sustainability. Um, 1960s, seventies, we had kind of earth day. We had the beginnings of the green movement. It was extremely nascent, but we had very little, um, worry about sustainability in the 1960s and seventies.

Um, we started to get regulations in the seventies. Um, we've started to get things like supply chain mandates, cause I want to have a green product, right. I want to have an organic product when I have a green product and my product in some way is being labeled as being marketed as being more sustainable.

So people started worrying about the supply chain and then boards started thinking about risk assessments. Like we have, we have what's the risk of the company, the impact from climate change to the company, that kind of risk assessment. How does that. And so that starts to drive sustainability and we've, we're starting to get things like science-based targets and the climate pledge, as companies start trying to do something about sustainability, what's their water reuse policy, um, recycling all those kinds of things and sustain sustainability is now being driven a lot by, uh, societal norms.

As we get to the social license to operate becomes a more of a factor now, like, do I want to deal with this company based on whether they have a good social, social, uh, option. And so I think the sustainability has evolved over to somewhere in this range. Now it's broadly accepted getting towards being broadly accepted, but it's still competing.

There's still a substantial resistance. Um, and the substantial chunk of the population around the world who are economically incented to not support sustainability, they're making their money out of fossil fuels. They're making them money out of the previous age, and this is the disruption that has to happen.

And this is why it has potentially kind of a very disruptive transition here, as we figure out how to, how to do this. And eventually we're getting more laws that drive sustainability into the point where it's the laws of the land and you just have to do it. And we're getting more of those kinds of things.

So that's sort of a rerun of what I did last year. Um, and then I just have some live topics and I was, I was trying to capture some things that I hadn't covered that, uh, as Carlota was talking. So what we've got is I think just there was a section really, she was talking about the government. And the things we get from the government and across social sustainability, the climate threat and post pandemic reconstruction.

And so the way I was thinking about this was governments had done security for a long time. Like the government existed to raise armies. Basically that's thousands of years old education is something, you know, hundreds of years, governments have decided it's good to educate their population. And most parts of the world invest in health.

And the governments involved in health either with national health services or, you know, the U S will maybe one day catch up and actually have a national health service. And I'll be able to put this in excepted, but that's just, yeah. Anyway then we have, I had to progress it, taxation in here because I think that's something the government is responsible for.

Um, it's convergent, it's one of these things. Some countries have progressive trends, taxation, others. Don't, it's one of the things we're trying to push to the. Um, and then you've got green energy that governments are pushing and it's sort of emerging. Um, and then cut out. It talks about meaning and creativity and, um, maybe color you can come on on, on the microphone a bit and talk a little bit about what you meant about the meaning and creativity piece.

So, as I was trying to understand, um, what those might look like or how to map them, just one comment, finances missing is missing completely. Uh, so, uh, um, the. The green economy can be achieved. There are two frameworks of mind. One is big finance, big banks, private money will try it somehow. They will suddenly become, um, uh, you know, um, socially aware and invested in the community or is driven by the price of state.

Um, or it's a combination of the two, um, Do you think that's probably an emerging thing right now, the ESG funds are kind of driving this right? And there's a bunch of things in the net, Sarah banking Alliance, but it's not really gone mainstream yet. It's a huge debate, uh, there, because the question is who decides what is green or not?

So under this ESG, uh, frame umbrella, just because somebody says that a fund is green, doesn't mean it's green. There's a lot of greenwashing happening and there's a lot of power associated. Uh, allocating, um, these labels, what is green and what is not, if we think about it like a prison, you know, the light comes through and something else comes on the other side who defined that prison basically influences how those numbers and how those flows of capital look like.

And this is where we, as citizens should pay attention a lot. And this is where a responsible state should pay attention and be involved. I mean, we are at the level where such definitions and search prisons are in Excel or in an Excel file. This is, this is where we are and somebody decides what values we have there, you know, w w honestly, it's a critically important issue.

And.

Well, I have a, I have a map of Andra coming up next and we make sure we don't run out of time, but I wanted to see if Colorado had some comments on this. If you could, um, you yourself and see if this is making sense to you, are you on mute now? He wanted to know what I meant by meaning and creativity.

It's associated to two things. One is education, which is going to be an asset much more important than owning a home, which was the acid of the, of the mass production here. So you could fill it up with electrical appliances. So you could spend your time as a couch, potato watching TV and, uh, on cooking in the, in the, in the garden.

And so on this sort of driving all the time. Uh, the education is about something that relates to you. So we would have health, we would have, uh, activity creativity instead of possession. Possession becomes a much less important possession of things and much less important than possession of, of meaning, of purpose of.

So people would do anything from, uh, you know, thinking that joy is exercising, going up mountains, doing bungee jumps or whatever, you know, this sort of very, your body, your health, your ideas, and also people on the web, uh, creating all sorts of things and, and even, and charging for it. You know, individuals becoming, uh, producers of.

Not just writing books or whatever, which, which a smaller elite of the population, but lots of people are doing even in a small way, uh, photography, photography, videos, things, and sending them around. And this is, this is a new way of having fun, which is different from sitting down to watch TV, which, which was the main thing.

So it is, they are two very important elements of what I have called the new lifestyles because each of the technological revolutions has brought a new lifestyle, which in turn creates a whole range of products and services that serve that particular lifestyle. So the lifestyle of course, of the mass production is what I just described.

The new lifestyle, I think, is going to be based on rental rather than purchase services rather than product. Self, uh, you know, health, exercise, yoga, all those things, which you, you have seen growing among the elite. And normally what happens in everything or logical revolution is that you have an elite that begins doing the new things.

And then they get copied both by business that makes it cheaper to do. And by people who aspire to that, and that's how we get a different thing. So green is also part of that sustainability, I mean, of that future lifestyle, which has to do with what we will require. So basically those are the things that give meaning and creativity to, to the new, the new conditions for, for good life aspiration.

So if we think about this, so one thing, sorry, that's what I have to check. Um, so I don't think we're going to have time for a Q and a, because you're going to go and can go through another map, right? Yeah, yeah, yeah. Um, even if we like say, uh, just the road, the rest of the time, you know, two questions, uh, to QA, I don't think we're going to be able to go through all the questions anyway.

So I'm just thinking for a, and we apologize cause obviously, you know what they're talking about. New. Year's very interesting and I don't, I didn't want to interrupt. Um, if people are going through the networking area later on, uh, I'm hoping Andra and Carlotta and Adrian will be there even for a few minutes.

So maybe we can get, got the questions there. Um, and we'll let Adrian finish, uh, his, uh, present. Okay. Um, so my thought here was education has been very institutionalized for a thousands of years. Um, and those institutions used to control education, but now education's become democratized. It's personalized, it's over the internet.

So maybe what we really want to do is sort of it's personal education and it comes sort of over here somewhere and it's supporting the creativity and meaning, but what we really want then is more government support for individual education rather than government support for the education institutions, institutionalized education.

Does that make some kind of sense color?

Okay. I need to patch this up. So of course the public education also has to change. You have to flip the classroom. We have to have not just people recording lectures, but making fantastic cinema, like things, you know, teaching online. And then, and then spending the education time in schools, uh, discussing, creating, having experiments, doing research, um, you know, a completely different sort of things so that, uh, people will be taught to work in teams to be creative, to be, you know, not, not just to answer it two plus two equals four, no matter how complex it's all answer what the teacher said, you know, the questions on the exams, it's a different thing.

So it actually means. That the public, it isn't just because it's become private, a private endeavor with internet. It's also, it's also a change in the nature of education, interdisciplinarity, basic things, lifelong learning, a whole revolution in education, which has really, really taken off. Yeah. But I think it's part of this verbal part of this golden age will be when that is in place.

I think that that's kind of part of this, cause it's really enabled by the internet and the fact that all the information is out there. We'd have to figure out how to organize it and find new ways of consuming it.

And there are many times I went to, to what I did trying to map what Andrew was talking about. And I'm not sure if I got this right, but these are sort of some of the elements she was talking about. Financial markets, financial institutions, And I think individuals and commercial banking, other things that consume the financial markets.

I think that was, I may have got this wrong. And then financial institutions, there's principals, TCFD footprint. There's a fairly accepted. The nets. A banking Alliance is still more controversial. There's this effectively a collateral framework that we need to develop that is green rather than the current one, because the current collateral framework is supporting the oil industry.

We need to switch the rules, which is gonna drive climate policy or driving policy drives it or something. And then there were a few other things. I wasn't quite sure where they, where they went. Does this any extensive? Uh, yeah, it does move pretty fast. So, um, what I was referring as financial markets, actually, it was financial market infrastructure, which is a generic term for, uh, all the systems and schemes, which links financial institutions together.

Uh, because people think about banks or insurance companies or things like that, but they don't think what is in between them and what is in between them is essential for how the whole system functions, so that financial market infrastructure, individually individual. Are always related to, uh, a bank or a, uh, an entity which plays a role of a bank and a bank.

It's a type of financial institution, a commercial bank. Um, net is zero banking Alliance, UN principles for responsible banking. TCFD are frameworks for basically reporting. What happens in the banking world either was my own footprint as a bank or, uh, what my client exposure. So here we're talking, especially about investment banks or how banks invest their money and in which industries, for which return, whatever they hold in their portfolio.

But they want to do something with it. First. They want to do some, that industry to be profitable, to have good returns and so on, but also they want to use their portfolio in exchange for accessing central bank money. So this is a collateral framework. What can I give you? You central banks. So you give me some money.

So I interact with the other banks in the financial market infrastructure. And then if the central banks signal to you that I give you more money. If you give me fossil fuel collateral, that's a method that the framework tells you, oh, it would be nice if you would invest in something else, you know, but because their incentives are at odds with each other.

Um, and that was just, just an example. The parts that I think are interesting. Uh, and we didn't insist a lot, but there were lots of example. There are a lot of technology companies doing various things about this world of finance. On one side, it's an industry of reporting because if reporting also say.

It's a massive industry has its own taxonomy. UK decided that they want their own one or their, I dunno how many classifications there are armies and armies of people just reporting what going on, but I'm more interested in the doing, is it something changing in, in reality? And we can spot in, in, within sport companies, doing things which make a difference, um, and we will see how big the impact would be or if they managed to, to, uh, to succeed.

Um, the examples I gave gave an individual level are in my view, a way of educating people about the carbon footprint. It's not like all of a sudden it will have a big impact, but people start to. To realize that it's, it's a real, it's a real thing. Um, and somehow it became, let's say fashionable to have an app, which tells you your carbon footprint.

There's a lot to, to be, to be done, honestly. And in my view, uh, the most important things at the moment are who decides the indexes and the classification, uh, in terms of carbon footprint.

Yep. That all makes sense. So I think what I got from your talk was this idea of this green collateral framework, which is what's really going to drive sustainable investors. Um, needs to be move from an emerging place to being something that's converging. So more and more countries around the world, change the rules, the banks start responding.

So we've set up, we've gained the system against, you know, invisibly somewhere in this infrastructure. We've gained the system. That's your, that's your message. We need to change the public policy to change that gaming back again. And I haven't seen much discussion of your, um, of this point that you've been making sort of out in the wider industry.

There was, uh, you know, I was seeing something today about the nets or a banking Alliance. There's as we get up to cop 26, Big discussions here. There was a really interesting, um, publication by the IEA yesterday, um, to go look at it, which is kind of their brief for cop 26 worth looking at that. Um, but I think also this banking Alliance, fundamentally, the way we work is that stuff has to be funded to happen.

And there's a lot of funds coming into renewables, but while we're still funding the fossil fuel industry, it's going to continue to be, uh, blocking everything. And I think that the other thing that I've seen discussion of which is also a little uncomfortable for people is that the economic models tend to be steady state.

They predict gradual change, maybe. Um, we're likely to have a much more radical change, like a, a recession, like change or a chaotic change. And there's, uh, the oil and fossil fuel industry and the banking industry that's invested in. May collapse suddenly, right. Rather than having this gradual transition over the next 20, 30 years.

So there's some things to watch for there. Um, where, where the longer you hang on, the more overhang you have in your life, Wiley coyote has gone off the cliff and eventually they look down and they actually fall, right? There's some, some element like that, which seems to be the more people get scared about the fact that there may be a, like a 2008 style recession coming the better, because then they may start acting sooner to actually be ready for it.

And beyond the, the survivors of some of the cataclysm, rather than the, the people sort of perpetuating the current current norms. So I think we're out of time right now. So I think I'm sorry about the, uh, the discussion we had, the, we had the chat internally. Um, I'll be online and, um, we can follow up on discussions on, uh, on the map.

Um, discussion boards and on Twitter and on wherever else. So thanks to everyone. If you wanted another, like maybe five minutes, I think that should be all right. Okay. We've got some Q and a here. There's lots of chat and Q and a, um, actually I will stop sharing my screen. We'll just go back to the discussion here.

Um, how can we make pollution cost money? So it acts as a force on the markets that's from earlier. Yeah. Yeah. You have to hear it first. I mean, that's basically the cost of carbon carbon pricing is an interesting topic, much bigger than we have time to cover lots of reasons why there should be a price on carbon and a bunch of interestingly complex systems dynamics that if you do it wrong, it can maybe be counter productive.

So it has to be done carefully, but I think ultimately there is likely to be a price on carbon that is going to help pollution, cost money, something else that we have to think about that, uh, pollution. We always think of pollution as the gases that go in there, but the pollution that has to do with, uh, the whole, the whole practice of planned obsolescence is an enormous amount of pollution that has to do with waste and the limits of the planet.

So we need to move to a rental economy, two products. That last a hundred years maintenance economy, which would create hundreds of thousands of jobs. So we would, we would have a prohibition of putting any appliance on the tip. Absolutely not accepted to throw out in the municipal, uh, garbage, whatever space.

And then, uh, that mean that companies would prefer both rental, so they will no longer sell, but there will be rental companies for whom they produce. And then, uh, this assembly to rescue all the things that are, you know, all the materials to do to the recycling and to do reusing and all that. So I think the whole range of, of pollution, we have to think about the whole thing.

Of course, the plastic in the sea. We've got to find a way of solve that. So it costs money. You make it post money. If you actually force people to swallow their own garbage or to then make products so long lasting that you don't, that they're not garbage until a hundred years later, when you can disassemble.

And of course you can do that with no more, uh, spare parts production. You just have it all on the web. You print it when you need it. 3d printed, all parts should be designed for 3d printing. Upgrading of products, be done mainly with software or with 3d printed parts. And not this business of having to buy a new product every three years or every, I mean, everybody buying a new product every three years and the more people that are consuming, that means that the pool will never get to have, because we don't have enough materials.

So that's, that's another big change that hospital. The rental and services, of course, products, change products and services. So you don't waste. Okay. I think we're going to have to wrap up. Unfortunately, folks, we have a lot of interest in questions I did copy and paste them. Uh, so I might send it through the three speakers.

And this has said there's networking, uh, between sessions. So if you go to the networking, um, area, uh, Adrian Carlotta and Andra will be there, uh, to have the answers, you know, some, some of your questions. Um, we're going to be back in this, uh, window, which is around or a circle window at 6:00 PM UK time. Uh, and, uh, the session following will be a health of a nation.

So I hope to see, you know, um, most of you back here and thanks everyone for joining us and thanks to, uh, Adrianne Carlotta Nanda for joining us to the us. Wonderful. Thanks very much. And I'll be sharing my links to my maps as a one way or another as a medium post or something. And then the chat sessions.